

REMARKS**Status of the Claims:**

Claims 1, 13, and 21 are currently amended, without prejudice or disclaimer to continued examination on the merits. Support for these amendments can be found on page 10, lines 22-29, on page 19, lines 21-30, and throughout the specification. Claims 2-4, 8, 9, 12, 14-16, and 20 are original. Claims 5, 7, and 17-19 are canceled, without prejudice or disclaimer to continued examination on the merits. Claims 6, 10, 11, and 22-55 are previously presented. Thus, claims 1-4, 6, 8-16, and 20-55 are presented for examination.

Claim Rejections - 35 U.S.C. 103:

Claims 1, 2, 6, 10-14, 21, 22, 27-29, 31-40, 42, and 50-55 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Factor (USPN 6,272,523) in view of Marques et al. (USPN 6,643,706).

Referring to Claim 1, Factor discloses a computer system, comprising:

a plurality of hardware resources (physical processes/servers) (Figure 2, reference characters 28, 30, and 32);

a plurality of logical resources (logical processes) (Figure 3, reference characters 42, and 44);

a plurality of functional processes (web browsers/applications from clients) (Figure 3, reference character 36; col. 3, lines 53-65);

a configuration process for configuring certain of the plurality of functional processes on particular ones of the logical resources (col. 3, lines 53-57); and

a mapping process for creating a map associating the plurality of hardware resources with the plurality of logical resources (e.g. abstract; col. 6, lines 27-32).

Factor inherently includes an operating system, since without it the server would not be able to perform the functions which were described. However, Factor does not specifically disclose an operating system that includes memory management, nor that the processes are

decoupled which supports a protected memory model, wherein a process is assigned a unique or separate protected memory block, such that processes may be started, upgraded, or restarted independently of other processes. In analogous art, Marques et al. disclose another computer system which identifies another operating system that includes memory management which supports a protected memory model (i.e. isolated fault occurrences), wherein a process (i.e. threads) is assigned a separate (i.e. own) protected memory block (col. 5, lines 50-60). Although it is not expressly stated that the processes may be started independently of other processes, this would be an inherent feature of the system since each thread is isolated, that in order for a thread to crash as expressly taught by Marques et al., it must be started and, as such, if the thread resides in its own memory space, it is independent of other threads. The Examiner has asserted it would have been obvious to one of ordinary skill in the art to combine the teaching of Marques et al. with Factor since, as one of ordinary skill in the art would know, Factor inherently requires an operating system to execute the application programs running, however does not recite any specifics or configurations as to the operating system. This would lead one of ordinary skill in the art to find other network operating systems, eventually finding the OS of Marques et al.

In Claim 1, currently amended, Applicants' operating system *"includes memory management which supports a protected memory model, wherein a process is assigned a unique or separate protected memory block, where the processes are decoupled from the system through views of the logical model, said views defining a particular set of data to which an associated process has access, wherein views allow multiple different processes to use the same logical model to be started, upgraded, or restarted independently of other processes."* Marques et al. do not teach memory management for a computer system, but a router that runs each process in its own memory space. Furthermore, there is no suggestion by Marques et al. to expand their invention to a computer system as claimed in Claim 1, wherein the processes are decoupled from the system. Marques et al. do not teach a centralized control that provides the appropriate software resources, or the decoupled re-instantiation of processes.

While Marques et al. teach the advantage of isolated memory, they do not teach the utility of *a decoupled system that enables multiple different processes to use the same logical model to be started, upgraded, or restarted independently of other processes*; but rather emphasizes that the isolation prevents the entire system from crashing (col. 5, lines 58-60). Claim 1, as currently amended, is not obvious in light of Factor and Marques et al. and Applicants request that the rejection be withdrawn

Referring to Claim 2, Examiner states that Factor discloses the computer system is a network device wherein the mapping process is a network management system process (col. 6, lines 4-10).

Applicants' invention, in contrast to Factor's, enables that the system be dynamically upgraded and monitored, while Factor's system enables load balancing of a web site over multiple servers, col. 6, lines 20-25. The elements and function of the elements of the cited art and the instant application are different.

Referring to Claim 10, Examiner asserts that Factor discloses a method and system of operating a computing system as stated in the claims above. Examiner admits that Factor does not disclose that the functional processes include device driver processes, however, *it is suggested by the prior art that this feature would be obvious to include to the system of Factor to allow the flexibility of adding servers to allow communications to occur with other devices.*

Applicants' Claim 10 takes exception with the Examiner's rejection, in that, by stating "it is suggested by the prior art that this feature would be obvious to include to the system of Factor", the Examiner is issuing an Official Notice without actually stating it. Official Notice has certain criteria that must be met. Examiner admits that Factor and Marques et al. do not read on functional processes, including device driver processes. If, in the context of currently amended Claim 1, functional processes including device driver processes are known, then the Applicants request that a reference be supplied or give Official Notice or allow dependent Claim 10.

Examiner, referring to Claims 11 and 12, states that Factor discloses a method and system of operating a computing system as stated in the claims above. Factor does not disclose that the functional processes include an ATM network protocol application, however, it is suggested by the prior art that this feature would be obvious to include to the system of Factor because ATM networking is well known in the art of networking and is an alternative to the standard Ethernet networking system.

Applicants reiterate arguments stated in rejection of Claim 10 for Claims 11 and 12, that is, Applicants request that a reference be supplied or give Official Notice or allow dependent Claims 11 and 12 in light of the Amendment and the arguments.

Referring to Claim 27, Examiner states that Factor discloses the process comprises a first process, the logical resource comprises a first logical resource, and the physical resource comprises a first physical resource and further comprising:

configuring a second process (client/application) on a second logical resource (col. 6, lines 4-32; Figures 3 and 5); and

applying the configured second logical resource to a second physical resource (col. 6, lines 4-32; Figures 3 and 5).

Applicants have amended Claim 21, the parent independent claim of dependent Claim 27. Claim 21 is currently amended to include the limitation of *“providing an operating system that includes memory management which supports a protected memory model, wherein a process is assigned a unique or separate protected memory block, where the processes are decoupled from the system through views of the logical model, said views defining a particular set of data to which an associated process has access, wherein views allow multiple different processes to use the same logical model to be started, upgraded, or restarted independently of other processes”*.

Factor does not teach that the processes are decoupled, and that *multiple different processes to use the same logical model to be started, upgraded, or restarted independently of*

other processes. Claim 27, in light of its dependency on current Claim 21, is now believed to be allowable.

Referring to Claim 28, the Examiner states that Factor discloses the first and second processes (clients/applications) are the same process (col. 6, lines 33-39). Additionally, referring to Claim 29, Factor discloses the first and second processes (clients/applications) are different processes (col. 6, lines 4-32) (it is inherent that when Factor discloses an embodiment of the invention to be used on the Internet (col. 6, line 6) that there are multiple clients to access multiple logical processes).

Applicants have amended Claim 21, the parent independent claim of dependent Claims 28 and 29. Claims 28 and 29, in light of their dependency on current Claim 21, are now believed to be allowable. In view of the Amendment, the arguments discussed for Claim 27, and by virtue of the dependency, Claims 28 and 29 are now believed to be allowable and retraction of the rejection is requested.

The Examiner has similarly rejected Claims 31-42, 50-53, and 55.

Applicants have amended Claim 21, the parent independent claim of dependent Claims 31-42, 50-53, and 55. Claims 31-42, 50-53, and 55, in light of their dependency on current Claim 21, are now believed to be allowable and retraction of the rejection is requested.

Claims 6, 13, 14, 21, 22, and 54 stand rejected by the Examiner for similar reasons as stated above.

Applicants' Claim 6 is a dependent claim depending from Claim 1. Claim 1 claims a computer system as claimed in claim 1, currently amended. As currently amended Claim 1, Applicants' operating system *"includes memory management which supports a protected memory model, wherein a process is assigned a unique or separate protected memory block, where the processes are decoupled from the system through views of the logical model, said*

views defining a particular set of data to which an associated process has access, wherein views allow multiple different processes to use the same logical model to be started, upgraded, or restarted independently of other processes". Marques et al. do not teach memory management, but a router that runs each process in its own memory space. There is no suggestion by Marques et al. to expand their invention to an entire computer system, as is taught in Claim 1; therefore, there is no centralized control that would be a resource to provide either the appropriate software, or the de-instantiation of the thread (process). Claim 6 is not obvious in light of Factor and Marques et al., and the Applicants request that the rejection be withdrawn.

Applicants have amended Claim 13 to read on a method of operating a computer system, which includes:

providing a modular software architecture, wherein said software architecture comprises a module that resides in a protected memory space, wherein the module has a logical name that can be resolved into a location and a process, wherein during a switchover to a backup module, for instance for an upgrade or a failure, the backup module assumes the resolvable logical name, such that computing processes continue substantially unaffected by the switchover;

providing an operating system that includes memory management which supports a protected memory model, wherein a process is assigned a unique or separate protected memory block, where said processes are decoupled such that they are decoupled from the system through views of a logical model, said views defining a particular set of data to which an associated process has access, wherein views allow multiple different processes to use the same logical model to be started, upgraded, or restarted independently of other processes;

creating logical resources having characteristics similar to particular hardware resources;

generating a map of logical resources to hardware resources; and

provisioning services to logical resources.

Neither Factor nor Marques et al. teach a map that is routinely refreshed to determine if hardware has been added or removed from the computer system, and decoupled processes,

wherein views allow multiple different processes to use the same logical model to be started, upgraded, or restarted independently of other processes; and provisioning services to logical resources. The rejection of independent Claim 13 is respectfully traversed.

Claim 14 is a dependent claim depending from Claim 13, and draws its novelty from independent Claim 13. While not addressed, Claims 15-16 similarly are dependent claims depending from Claim 13, and they draw their novelty from parent Claim 13.

Claims 21 and 22 were addressed in the previous section. Claim 54 depends from Claim 21, and likewise should now be allowable in view of the dependency.

Claims 23-26, and 30 stand rejected by the Examiner under 35 U.S.C. 103(a) as being unpatentable over Factor in view of Bruck et al. (USPN 6,088,330).

Referring to Claims 23, 24, and 26, Factor discloses a method of operating a computer system as stated in the claims above. Factor does not disclose detecting a fault on the physical resource, failing over from one resource to another and applying the logical resource to the other physical resource. Bruck et al. disclose: detecting a fault on the physical resource (col. 2, lines 23-40); failing over from the physical resource to a second physical resource (col. 2, lines 23-40); and applying the configured logical resource to the second physical resource (col. 2, lines 23-40).

Referring to Claim 25, Factor in view of Bruck et al. discloses a method of operating a computer system as stated in the claims above. Factor in view of Bruck et al. does not disclose the event includes a resource consumption notification, however, it is suggested by the prior art that it would have been obvious to modify the system of Factor and Bruck et al. to include a resource consumption notification to monitor the relative health of the resource (i.e. link, switch, router, etc.) and to determine if the resource is overused or underused. Referring to Claim 30, Factor discloses a method of operating a computing system as stated in the claims above. Factor does not disclose that the first and second logical resources are the same logical resource. Bruck et al. disclose the first and second logical resources are the same resource (col. 2, lines 23-35). It would be obvious to a

person of ordinary skill in the art at the time the invention was made to combine the teachings of Bruck et al. and Factor to allow logical resources to switch physical resources when a physical resource is not working or has been deactivated.

Applicants point out to the Examiner that while Bruck et al. teach redundancy, they do not teach that configuration is applied after the failure, as claimed in Claim 23. As to Claim 24, Bruck et al. do not teach that after applying the configuration that the backup resource (module) assumes the resolvable logical name. Claim 26 depends from Claim 24, which depends from Claim 21. Claim 26 has all the limitations of Claims 24 and 21. As Bruck et al. do not teach that after applying the configuration that the backup resource (module) assumes the resolvable logical name, Claim 26 is believed to be allowable, as well as Claims 23-24 in view of the amendment to Claim 21, and in light of the arguments.

As to Claim 25, Bruck et al. only teach a fault as an event, and do not teach a resource notification as an event. Applicants request that the Examiner reconsider this hindsight position as being obvious, as Bruck et al., which issued 2 years after Factor, did not think it was obvious, or it would have been included in their specification.

Claims 3, 4, 8, 9, 15, 16, 20, 41, and 43-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Factor in view of Allen et al. (USPN 5,704,041).

Applicants' Claims 3, 4, 8, and 9 depend from Claim 1; Claims 15, 16, and 20 depend from Claim 13; and Claims 41 and 43-45 depend from Claim 21. Applicants' claims derive their novelty from the parent claims.

Claims 48 and 49 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Factor in view of Davis et al. (USPN 6,477,566).

Applicants' Claims 48 and 49 depend from Claim 21. Davis et al. teach the use of connection templates to describe a network element. In contrast, Applicants' invention uses an appropriate mission kernel image executable file as well as logical resource to represent

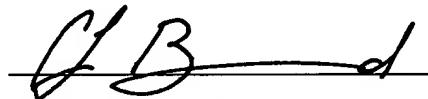
the physical port on a forwarding card. A switchover can be effected seamlessly to the physical port on the forwarding card. Davis et al. do not teach the switching over process. In Claim 49, the logical resource is claimed as comprising a service endpoint and the physical port comprises a port on the forwarding card. Davis et al. do not address switching over when there is a fault. Claims 48 and 49 should be allowed in light of the amendment to Claim 21 and the arguments.

CONCLUSION

Applicants would like to thank Examiner for the attention and consideration accorded the present Application. Should Examiner determine that any further action is necessary to place the Application in condition for allowance, Examiner is encouraged to contact undersigned Counsel at the telephone number, facsimile number, address, or email address provided below. It is not believed that any fees for additional claims, extensions of time, or the like are required beyond those that may otherwise be indicated in the documents accompanying this paper. However, if such additional fees are required, Examiner is encouraged to notify undersigned Counsel at Examiner's earliest convenience.

Respectfully submitted,

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